



COMPUTER SCIENCE

in

ARKANSAS



ADE OFFICE OF COMPUTER SCIENCE IS OFFERING SUMMER VIRTUAL PROFESSIONAL DEVELOPMENT

The CSforAR Team is happy to announce our Summer 2020 Professional Development training sessions. Please note: all sessions will be using the Zoom platform. While all current offerings can be found by visiting the ADE Computer Science [Professional Development Schedule](#), here are summaries of each of the sessions:

[K-4 Introduction to Computer Science](#) (2-day training)

Are you new to computer science and/or looking for ways to incorporate activities? Join us for this entry-level training that focuses on the integration of computer science into the K-4 classroom. Stay for the engaging activities and leave with resources including lesson ideas, unplugged activities, and digital projects. This professional development will be offered twice: June 16-17 & July 6-7. Registrants are welcome to attend both the Intro and Deeper Dive back-to-back.

[K-4 Deeper Dive Into Computer Science](#) (2-day training)

Are you ready to further develop your computer science content knowledge? This training puts participants on the path to better understand the K-4 Computer Science Standards. Participants are expected to have entry-level CS knowledge (such as that presented in the K-4 Introduction). This professional development will be offered twice: June 18-19 & July 8-9. Registrants are welcome to attend both the Intro and Deeper Dive back-to-back.

[Coding Block Resources](#) (2-day training) Do you need resources and projects to teach the standards? This PD will help coding block teachers go above and beyond the code. We will help you find activities, resources, and projects that will make the coding block exciting and fun. This professional development will be offered twice: June 18-19 & July 8-9. Registrants are welcome to attend both the initial and resource course back-to-back.

[K-8 Lead Teacher Training and Bonus Program](#) (5-

day training) Share your excitement and enthusiasm for computer science by becoming a lead teacher in your district. Let us help you create a foundation of computer science knowledge, integrate CS into various content areas, become a master of CS tools, and build a toolkit of lesson plans, projects, budgets and event plans. Various physical and digital tools will be used, though on-site physical devices are not required for the training. This 30-hour professional development is mandatory for educators interested in the Arkansas Department of Education K-8 Lead Teacher Training and Bonus Program. For more information, see: bit.ly/K8CSforARBonus. This professional development will be offered twice: June 22, 24, 26, 29, 30 & July 13, 15, 17, 21, 23. Space is limited to the first 50 registered participants statewide.

[Coding Block](#) (2-day training) Do you need to learn the concepts behind the coding block? Do you want to explore a beginner-friendly, text-based programming language for your class? This training puts you on the path to better understand the coding block standards and builds your proficiency in a text-based programming language. This professional development will be offered twice: June 16-17 & July 6-7. Registrants are welcome to attend both this initial and the resources back-to-back.

[5-8 Introduction to Computer Science](#) (2-day training)

Hello middle school teachers! Are you interested in bringing CS into your 5-8 classes by embedding it into your current activities? This is an entry-level training aimed at bringing you all the experience and skill to deftly weave computer science into your curriculum. This professional development will be offered three times: June 16-17, June 18-19, & July 1-2. Please note, a separate course is offered for teachers interested in Coding Block. Interested in sharing your knowledge, mentoring other educators, and bringing the CS excitement to your district? Join the Arkansas K-8 Lead Teacher Training and Bonus Program.

VIRTUAL COMPUTER SCIENCE SUMMER CAMPS FOR STUDENTS

[Cybersecurity Virtual Summer Camp: UA Little Rock Cyber Gym](#)

Sessions: July 6-9 and July 13-16; 9:00 - 11:30 am

University of Arkansas at Little Rock is hosting a four-day virtual camp where students will learn about cybersecurity. Students will participate online via Canvas, experience the UA Cyber Gym, and finish the week with a hackathon using the skills learned in the camp. For more information about the camp, visit: <https://bit.ly/3er5L4q>. Please make sure you meet the requirements needed to use the Canvas LMS found at: <https://bit.ly/3dxqFif>. The deadline to signup is July 1, 2020.

[The Innovation Hub 2020 Summer Camps](#)

The Innovation Hub in Little Rock summer camps are packed with exciting and fun hands-on activities designed to engage young minds and hands to explore the wonder of STEAM. Each weekday in July, they will have several hours of fun activities for campers to explore—both virtually and at-home. Please visit <https://arhub.org/summer/> for further information.

[UA Little Rock VEX Robotics Camps](#)

Sessions: June 8-12; June 15-19; June 22-26

The UALR STEM Education Center will be hosting 6 VEX camps for Summer 2020: VEX IQ Beginner, VEX IQ Advance, VEX Girl Powered, and VEX Robotics. All camps are Monday through Friday, either 8:30 - 11:30 am or 1 - 4 pm. The cost for each camp is a non-refundable \$180, which includes a t-shirt and snacks. To ensure effective student-to-instructor ratios, sessions will be limited to 24 students. All camps will feature a competition on Friday where family and friends are welcome to attend. For more information visit: <https://bit.ly/3dwPNFP>

[Phillips 66 Virtual Camps](#)

The University of Arkansas College of Engineering is offering three virtual summer camps to students and families: H.E.R.O.E.S, Helping Everyone Realize Opportunities in Engineering & Science, Grades: K-4, July 6-10, Plight of the Bumblebees - Engineering Solutions to Pollinator Extinction Grades: 3-6, June 15-19 and July 13-17, and Engineering Entertainment - Amusement Park Challenge, Grades: 5-8, June 22-26 and July 20-24. For more information on the three virtual camps offered please visit: <https://bit.ly/2XsHGEy>

[High School Computer Science and Certification](#)

[Preparation](#) (5-day training) Want to be a high school computer science teacher? Don't know where to begin or need help getting 528-certified? Are you a beginner, but want to develop through intermediate text-based programming skills? The purpose of this training is to help narrow down and focus on important concepts while also giving you a basic understanding of various computer science principles. We will focus this summer wholly on Java. This session is to prepare educators who are planning to teach high school computer science or needing assistance passing the Computer Science (CS) Praxis Exam 5652. Participants should expect to spend time after the training before attempting to take the Praxis. This professional development will be offered twice: June 1, 3, 5, 8, 10 & July 20, 22, 24, 27, 28.

[Advanced Workshops](#) (3-day training each) Are you interested in a deeper dive into InfoSec, Networking, Java or Python? Do you already have your 528 Computer Science Teacher Certification or 5014/5016 Computer Science Approval Code? Do we ever have wonderful news for you! Not only will we be offering each of these 3-day sessions, but also attending any of these is a step for qualifying for the Advanced Training Bonuses announced at <https://goo.gl/mLu4dX>.

Information Security:	June 24 – 26
Networking:	June 29 – July
Python:	July 13 – 15
Java:	July 29 – 31



GOVERNOR'S COMPUTER SCIENCE & CYBERSECURITY TASKFORCE: INDUSTRY SUBCOMMITTEE OVERVIEW

By Errin Stanger
Deputy Director of the Arkansas Regional Innovation Hub

I have the honor of chairing the Industry Subcommittee for the Governor's Computer Science and Cybersecurity Taskforce. This is quite an honor for me personally and professionally. I have been with the Innovation Hub since we opened our doors in 2014, and our mission is to inspire innovation and expand opportunity. I believe the work of this taskforce has a very similar mission. We are committed to furthering the work of the first taskforce and continuing to establish Arkansas as the lead for Computer Science and Cybersecurity. The industry subcommittee is made up of Tom Chilton, Gopala Chrishna, Mike Rogers, Rick Massengale, Yessica Jones, Allison Nicholas, Joel Gordon and Adam Holland. We believe Industry has an important and pivotal role in shaping how Arkansas moves forward. We have been, and will stay committed to, the Governor's goals of reviewing the K-12 Computer Science and Cybersecurity academic implementation instruction, providing sufficient pathways for students, creating connections between industry and education through classroom-engagement, evaluating postsecondary institutional efforts and evaluating the utilization of the \$2.5 million dedicated to Computer Science.

Our main focus as a subcommittee is to figure out how Industry can contribute and further the success of Computer Science and Cybersecurity in Arkansas. Our work will be included in the progress report that is due by June 30, 2020. We developed 10 discussion points and concerns facing industries in Arkansas. Each discussion point was analyzed to determine which agency should be the lead, legislation and regulation needs, funding needs and roadblocks. We met each month as a team for the past five months to determine possible solutions to engage Industry as an important indicator for success within the Governor's goals.



I have included a picture of me with our Innovation Hub Executive Director, Dr. Christopher Jones, and staff members of Jericho Way. We created the Arkansas Maker Taskforce when our building closed due to COVID-19 on March 13, 2020. Our taskforce has been creating PPE and we are delivering 200 masks to Jericho Way in this picture. We are happy to be able to provide support during this time of need, and I am proud of the industry partners in Arkansas that are also making a difference.

Although the virus has upended how we operate and engage, the taskforce has done an amazing job to stay focused and committed during COVID-19. We would like to thank Chairmen Mr. Bill Gossage, Dr. Allison Roberts, Anthony Owen and the entire CSforAR team.

DEPARTMENT OF COMPUTER SCIENCE AT UA LITTLE ROCK ANNOUNCES CYBERSECURITY DEGREE PROGRAM

The CSforAR team is pleased to begin highlighting various postsecondary institutions and their offerings in the fields of: Computer Science, STEM, Cybersecurity, etc. The first program we are highlighting comes from the Department of Computer Science at UA Little Rock.

The Department of Computer Science at UA Little Rock is introducing a recently approved undergraduate bachelor's degree program in cybersecurity. This new BS in cybersecurity will open doors to exciting and lucrative careers in a profession of ever-increasing importance.

This new degree offering is a natural outgrowth of cybersecurity initiatives the Department has been leading. Opportunities for students include a minor in information assurance and a [Cybersecurity Club](#) that competes regularly and successfully in cyber defense competitions. In collaboration with the Arkansas Department of Education, students and faculty in the Department have designed and implemented a cloud-based system supporting the development and deployment of cybersecurity exercises. The CyberGym will be available to all K-12 schools in Arkansas starting this fall. Philip Huff, Assistant Professor and the Department's leading expert in cybersecurity, is collaborating with Virtual Arkansas in the development of curricula that can utilize the CyberGym.

"The Department of Computer Science has been actively involved in research and teaching in cybersecurity and information assurance for about 10 years," said Dr. Albert Baker, interim chair of the Department of Computer Science. "The addition of a B.S. in cybersecurity is an exciting evolution of the department's commitment to this aspect of national security. We are coordinating with the Arkansas Department of Education, representatives from Arkansas military contingents, and area industry leaders in the development of this program. Graduates of this program will be protecting all aspects of our digital lives."

The need for cybersecurity has evolved right along with the advances in computing and the Internet. Along with the societal benefits our digital world has yielded, it has also been increasingly misused in ever more sophisticated ways. In this age of unprecedented growth in digital information, it comes as no surprise we now experience incessant cyberattacks against our Internet systems and data stores. This is producing a truly explosive increase in the demand for cybersecurity professionals. Studies predict a deficit of 3 million cybersecurity professionals in the next few years.

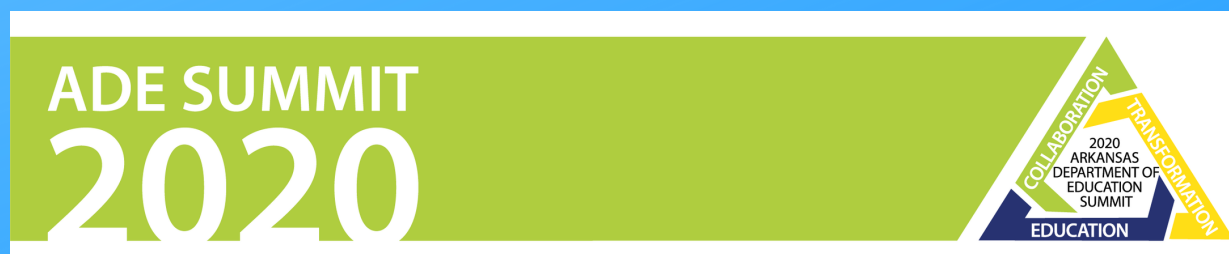
While the BS in Cybersecurity will appear in the 2020-2021 Undergraduate Catalog, the freshman-level courses required for this degree are available in the Department now. Questions about the BS in Cybersecurity at UA Little Rock can be directed to Baker at abaker@ualr.edu or Huff at pdhuff@ualr.edu.

ADE SUMMIT ON DIGITAL PLATFORM JUNE 16-18

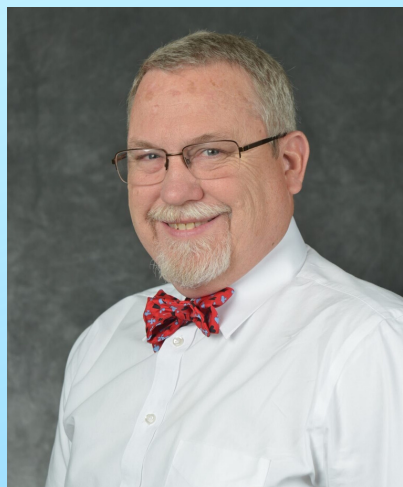
Due to the current health crisis, the Arkansas Department of Education (ADE) Summit is moving to a digital platform. It is important to note that this professional development event is now FREE to all participants.

The ADE Summit combines many smaller conferences from the past into one opportunity, expanding the reach of those previous events. The Summit will give participants the opportunity to attend virtual sessions that offer a wide range of topics that can benefit all educators. Educators will still have access to exciting presenters, learn about innovative programs and so much more!

For more information including how to register please visit the ADE [Registration Page](#).



CS SPECIALIST SPOTLIGHT



After serving over 20 years in law enforcement and 11 years as a mathematics educator, Jim Furniss came to serve on the Arkansas Computer Science Team in December of 2016. Jim is currently housed at the Arch Ford Education Service Cooperative in Plumerville, Arkansas. Furniss's interest in technology dates back to his days on the force.

"In the early years of my career at my department, sometimes an officer had to relieve or even cover an entire shift in the dispatch office. In the dispatch office, there was an IBM terminal that would print nationwide BOLO (be on the lookout). The printer paper was green and white striped and about three-feet wide. To conduct a nationwide search, the input had to be formatted in a specific order and was very much a command-line input. I researched--this was 15 years before Google--the format to search for AWOL and National Warrants. I immediately discovered the power of the knowledge of knowing how to write code. I was definitely hooked."

However, the path that led him to academia was after he retired from the police force.

"My retirement party consisted of working in Iraq and Jordan as an International Police Liaison Officer (IPLO). While in Iraq working with the Iraqi Police Service (IPS), I was able to run CAT5 and build a satellite network for my team. Again the desire to know computers and networking demonstrated the power of knowledge."

That desire and willingness to learn more and step out of his comfort zone is what led him to work with the current CSforAR team.

"I have always been an A/B student and very successful at standardized testing. I tested to become a police officer, I tested to make the rank of Sergeant, I tested to graduate college, I tested to become a teacher; testing was never my problem, until Praxis 5651. When my wife first told me about the CS Specialist positions being opened in the state, I immediately processed what I thought would give me that step above other applicants. If I applied for the position with the 528 CS endorsement on my license, I believed it would be a benefit. So, I signed up for the Praxis 5651. I mean, really, how hard could it be? To teach secondary math, I had to pass several Praxis exams and I've taught pre-calculus, algebra, geometry, algebra II and this is only computer science.

"As you have probably guessed, I failed the exam. Of course, after I realized my ignorance, I researched what was needed and passed. At the time, I did not realize the power of that failure. Shortly after starting this job, I began encouraging teachers to step out of their comfort zone and take a Praxis exam over content that was way outside their comfort zone. Being able to demonstrate my personal failure seemed to take teachers by surprise, and then they began to take me a little more seriously about, 'hey if he failed, study and passed, maybe I can do the same.'"

Since passing the Praxis, Jim has continued his passion for learning and has added the PCEP Certified Python. When asked about the future of computer science for Arkansas students, Furniss replied, "I remember reading Dick Tracy comic books where he would use his two-way radio watch, and now I press the walkie talkie app on my watch and talk to my child anywhere/anytime.

"Computer Science is a tool that can allow our students to transform today's science fiction into tomorrow's reality."

As always, the CSforAR team is here to help! Please feel free to contact him at jim.furniss@arkansas.gov should you have any questions.

DIGITAL CSTA CONFERENCE THIS SUMMER

It's that time of year again, time to schedule your professional learning opportunities! In an effort to meet teachers where they are, the annual Computer Science Teachers Association is going digital. CSTA 2020 is set for July 13 - 14, 2020, with more than 100 different sessions available to teachers. To register, please visit: <https://bit.ly/36UttDy>

Curious as to what offerings there will be? Check out the agenda of sessions at <https://bit.ly/36UttDy>.



HACK ACROSS ARKANSAS 0X01 - WHO ARE THE HACKERS?

Eli McRae,
Computer Science Specialist for the State of Arkansas

Why does hacker have a negative connotation for many people? It's likely that you have seen recent news of data being stolen or somehow sold. These articles link this criminal activity to certain technical actions. The word 'hacker' is then applied to the pairing of the crime and the technical action.

Often, it seems that people act like all hackers are criminals. Assumptions are made about motivations, belief-systems and personality of these people as thoroughly criminal. What is often lost is that every hacker is a person with their own ethical code, and that it's perhaps better to separate the knowledge and capacity of an action (how to hack) with the ethics of doing so (whether to hack). A locksmith is an excellent example of this; they have the ability to unlock your car without needing your key, but they provide a service, and are not generally accused of stealing vehicles by night.

No one will argue that some hackers break the law. Sometimes, just hacking a particular system is a crime outright. Sometimes, people use computer systems to facilitate crime in meatspace (Editor's note: this term means the physical world), and they are called hackers even though nothing they did really qualifies them for that term. In the media, often the term hacking refers to digital burglary, theft of service or any other meatspace common crime. But that's not hacking; that's just crime with a computer.

Special attention needs to be drawn to the positive outcomes of the hacker community. The current incarnation of the maker community and all the good that it produces can be, in some form or fashion, attributed to its roots in the hacker community. **In a post from 2013**, MAKE Magazine founder, Dale Dougherty, states that his original intentions were to name the magazine HACK. When challenged on the prospective title, his defense was that hacking wasn't confined to just programming. His reasoning failed to persuade his audience and the name MAKE was chosen because it was more palatable.

Computer hackers are driven by the belief that there is always more that can be accomplished with these magical science machines. They recognize potential and often have great vision. I hope that you can work to count yourself among them.

For further reading on this topic please visit the following links: **20 influential hackers you might have heard of** and **Hacker culture**.



UPCOMING EVENTS

<http://bit.ly/CSforARPD>

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SOCIAL MEDIA

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